Innovative Financing Mechanisms:
Efficiency Service Agreements and NY Green Bank

This webinar will begin shortly

December 9, 2015
Welcome!

Today’s topic: Innovative Financing Mechanisms

Connect to audio with your phone using your unique attendee ID:

- Host: Dazzle Ekblad
- Audio connection:
  - Local 1-518-549-0500
  - Toll Free 1-844-633-8697
- More call-in numbers
- Access code: 642 968 643
- Attendee ID: 3
- Meeting number: 642 968 643
Welcome!

Today’s topic:
Innovative Financing Mechanisms

Questions?

*Use WebEx chat function*
Agenda

I. Introduction & Announcements - Dazzle Ekblad, NYSDEC

II. Efficiency Service Agreements - Doug Golden, Director of Business Development, Metrus Energy

III. NY Green Bank - Caroline Angoorly, Chief Operating Officer and Managing Director, NY Green Bank

IV. Q &A - Dazzle Ekblad
Announcements

• **Funding Opportunity**: Partners for Places matching grant; deadline is Jan. 29; [http://www.fundersnetwork.org/partnersforplaces](http://www.fundersnetwork.org/partnersforplaces)

• **Ongoing**: feedback to DEC re: power plants and the state’s implementation of the Clean Power Plan to climatechange@dec.ny.gov


• **Thurs. Jan.14, 10:30am-12pm**: Climate Smart Communities Webinar Creating a Natural Resources Inventory
Efficiency Service Agreements
Doug Golden, Metrus Energy
Delivering an Integrated Energy Efficiency Solution to Municipalities in New York

December 9, 2015
Introduction to Metrus Energy

- Third-party financier and owner of large-scale efficiency retrofit projects
- Fund 100% of project costs using proprietary Efficiency Services Agreement (ESA)
- Off-balance sheet financing solution where customers only pay for realized savings
- Partner with leading ESCOs and contractors
- Operating ESA projects with Fortune 200 firms and major institutional customers
Hurdles to Implementing Projects

Key reasons that efficiency projects do not get undertaken:

• Hurdle rates and time to payback
• Lack of trust in energy savings numbers from vendors
• No budget set aside for those projects at the beginning of the year
• Property tax caps
• Divert cap-ex dollars away from other priorities
Poll Question

What has been the main reason more projects have not been implemented?

Select one option

Lack of budget/capital

Projects exceed maximum allowable payback

Uncertainty of/no way to measure results
## Enhanced Value to Customers

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Description</th>
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<tbody>
<tr>
<td>Avoid Capital Outlay</td>
<td>Metrus pays for all design and implementation costs</td>
</tr>
<tr>
<td>Services Agreement Structure</td>
<td>ESA is an off-balance sheet financing solution with regular payments similar to a standard utility bill</td>
</tr>
<tr>
<td>Reduce Operating Expenses</td>
<td>ESA service payments are set below the current utility price</td>
</tr>
<tr>
<td>Enhance Reliability of Operations</td>
<td>ESA covers periodic maintenance services to ensure long-term reliability and performance of the project equipment</td>
</tr>
<tr>
<td>Flexible, Multi-facility Financing Solution</td>
<td>ESA design allows for addition of new EE measures and programmatic delivery across a customer’s entire facility portfolio</td>
</tr>
<tr>
<td>Eliminates Performance Risk</td>
<td>ESA incorporates a pay-for-performance structure; if the project doesn’t save, the customer doesn’t pay</td>
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The Road to Energy Efficiency Savings

**DEVELOPMENT**
- Conduct site audits
- Identify Energy Conservation Measures (ECMs)
- Define project scope

**FINANCING**
- Structure finance solution
- Fund 100% Project Costs
- Retains ownership of project assets

**OPERATIONS**
- Measure performance & savings
- Operate and maintain equipment
- Identify new savings opportunities
Typical Project Profile & Scope

Projects can deliver savings from a wide range of energy efficiency measures

- Building automation & controls
- Lighting retrofits & controls
- Compressed air (leak detection & repair)
- Heating, ventilation & air conditioning (HVAC)
- Central plant systems
- Boiler replacement & system improvements
- Pumps, fans, motors & drives
- Cogeneration (onsite generation of electricity)
- Water efficiency measures

Typical project profile

1. Ideal customers are commercial, industrial, healthcare, and higher education
2. Multiple energy efficiency measures are blended into single project scope of work
3. Project size is generally $3-10 million
4. ESA (project) term is generally 7-10 years
Typical Efficiency Opportunities for Municipalities

• Street lighting – can account for 40% of total electricity bill. Reduced maintenance expenses are an added benefit

• Traffic Signals – LEDs are up to 90% more efficient than ordinary signal bulbs. Reduction in maintenance expenses as well since LED signals last up to 10 years

• Water and wastewater efficiency projects – wastewater treatment can account for 33% of total electricity bill for a municipality.

• In-building improvements – LED retrofits, building controls, boilers, chillers, VFDs

• Conduit to local businesses
ESD Project Economics

Service Charge = (Physical Units of Savings) * (Service Rate, $/unit) + Non-Energy Savings

Savings created by:
- Year 1 Service Charge is ≤ Avoided Utility Cost
- Fixed Annual Escalation is ≤ Expected Utility Rate Increase
ESA Project Parties: Key Roles

ESAs integrate the technical and financial services required to make projects a success for customers.

**Efficiency Services Agreement**
Financier funds 100% of project costs. Customer pays only for realized energy savings.

**Efficiency Services Performance Contract**
Financier and ESCO enter into project installation agreement. Financier pays for all ongoing maintenance and project monitoring services.

**Project Installation**
ESCO constructs the project and performs ongoing maintenance and monitoring.

**Customer**

**ESCO**

**Financier**
Typical Development Process

**Preliminary Energy Assessment**
- Contractor conducts technical review

**Project Financial Review**
- Metrus develops initial ESA options and terms

**Customer Approval**

**Sign Letter of Intent**

**Project Contracts**
- Metrus prepares key project-level contracts

**Final Project Scope**
- Metrus and contractor recommend final project scope to customer

**Investment Grade Energy Audit**
- Metrus financial review
- Contractor conducts detailed technical work

**FUND PROJECT**

**Project Construction**
- Contractor installs project equipment
- Metrus pays contractor

**Identification of New Efficiency Measures**
- Metrus pays for ongoing maintenance services
- Contractor measures energy savings and Metrus bills the customer only for realized and verified savings
- New upgrades are identified and added periodically

**END OF TERM**
- Customer purchases efficiency equipment at fair market value, or extends the contract w/ Metrus

**Ongoing Savings**
### ESA vs Other Financing Arrangements

#### Summary of Key Energy Efficiency Finance Terms

<table>
<thead>
<tr>
<th>Ownership of Energy Efficiency Equipment (&quot;EEP&quot;)</th>
<th>Customer Owned Equipment, paid in full</th>
<th>Customer's Traditional Debt Financing</th>
<th>Equipment Lease Financing</th>
<th>Metrus’ ESA - services contract</th>
<th>Is Metrus’ ESA better, same or worse than other financing structures?</th>
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<td>Lessor</td>
<td>Metrus</td>
<td>n/a</td>
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| Customer’s Balance Sheet Treatment (subject to Customer’s own accounting analysis) | ON                                    | ON                                   | OFF                      | Better: Off balance sheet more advantageous to Customer |

| Upfront Capital Cost to Customer | 100% of project cost | Closing costs and fees | Closing costs and fees | None. | Better: Customer does not pay anything until project is operational and savings are being realized. |

| O&M Responsibility | Customer | Customer | Customer | Metrus | Better: Metrus (not Customer) bears the O&M risk |

| Performance Risk | Customer | Customer | Customer | Metrus | Better: Metrus (not Customer) bears the EEP performance risk |

| Periodic Payment Obligation | None | Fixed for the loan term | Fixed for the lease term | Customer pays only for actual savings realized during the ESA term | Better: Customer only pays for actual savings realized |

| Transfer of Property/Building | EEP goes with the building to new owner | Pay off debt or new owner assumes the loan | Pay off equipment lease or new owner assumes the lease | Purchase the EEP or the new owner assumes the ESA. | Same as customer owned debt and lease financing |

| Transfer of Energy Efficiency Property (EEP) title to Customer | At purchase | At purchase, subject to lender’s lien/foreclosure rights | At end of equipment lease term for nominal value | At end of ESA term for fair market value, plus option for EEP purchase during the ESA term. | Better: Customer option to purchase the EEP prior to the end of the ESA term |

| Term/ Tenor | None | up to 20 years | up to 20 years | 10-15 years | |

### Metrus ESA Compared to Other Energy Efficiency Financing Structures

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### Pros:
- Off balance sheet, pay for performance, integrated delivery of technical and financial solutions, can deploy quickly to minimize cost of delay

### Cons:
- Higher cost of capital for an ESA however savings compared to utility rate and you can save tax exempt capital for other uses.
NY Green Bank

Caroline Angoorly, Chief Operating Officer
Innovative Financing Mechanisms: NY Green Bank

Climate Smart Communities

Caroline Angoorly, Chief Operating Officer
December 9, 2015
Where NY Green Bank Fits In
- Enormous Scale of Energy Investment
- Reforming the Energy Vision
- Pillars of REV

NY Green Bank & the Clean Energy Marketplace
- Significant Opportunity Exists
- NY Green Bank - Profile
- Market-Oriented Solutions
- Strong Market Response
- Market Response Benefits Entire State
- Investment Process
- Current Portfolio
- What’s to Come
- Municipal Opportunities
Where NY Green Bank Fits In
Enormous Scale of Energy Investment

Capital needed far exceeds the ability of the public sector to fund – mobilizing private sector involvement and investment is essential

$30.0 Billion*

Investment required to replace New York’s energy infrastructure just to meet currently projected energy demand over next 10 years

* 2015 New York State Energy Plan
Reforming the Energy Vision (REV) is New York’s comprehensive strategy to create an efficient, reliable and affordable clean energy system.
REV comprises three main pillars underlying all energy-related state-backed initiatives, agencies, and authorities.

NY Green Bank
Strategically positioned to mobilize greater private sector activity in New York’s clean energy markets.
NY Green Bank & the Clean Energy Marketplace
Market opportunities for New York-based clean energy projects over the next ten years ~ $85.0 billion*

* Booz & Co., August 2013 - Estimate does not take into account potential utility scale generation, total potential for any other generation types other than distributed solar electric, CHP, onshore wind, biomass or anaerobic digesters.
NY Green Bank – Profile

$1.0 billion State-sponsored specialized financial entity

Mission: To accelerate clean energy deployment in NYS by working in partnership with the private sector to transform financing markets

<table>
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<th>Key Elements &amp; Objectives</th>
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<td>Market focused, responsive and transformative</td>
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<td>Capital provided at market, rather than subsidized, rates</td>
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<tr>
<td>Increase clean energy (capacity and generation)</td>
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<tr>
<td>EE avoided MMBtu/MWh</td>
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<tr>
<td>Reduce greenhouse gas (GHG) emissions</td>
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<tr>
<td>Mobilize greater private sector capital in New York’s clean energy markets</td>
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<tr>
<td>Enable greater scale &amp; replicability</td>
</tr>
<tr>
<td>New &amp; expanded asset classes, liquidity</td>
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Market-Oriented Solutions

Private sector project developers and capital providers propose creditworthy clean energy transactions through open solicitation: www.greenbank.ny.gov/Partnering-With-Us/Propose-an-Investment

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<th>Broad Categories of Capital Solutions</th>
<th>Product Pricing</th>
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<td>Credit Enhancement</td>
<td>Rates reflect risk, comparables, and commercial expectations</td>
</tr>
<tr>
<td>Warehousing/Aggregation</td>
<td>Demonstrate NYGB is prudent steward of ratepayer funds</td>
</tr>
<tr>
<td>Asset Loans &amp; Investments</td>
<td>Serve as agent for greater private investment</td>
</tr>
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<td>Composite Products</td>
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Since inception (and through September 30, 2015), over $850.0 million in proposals received

$742.1 million in proposed projects meet NYGB’s investment criteria
  ~$300.0 million currently in NYGB’s Active Portfolio and progressing towards close

NYGB has already executed and closed $49.5 million in investments

Continue to generate deal flow through ongoing outreach and open solicitation

Robust pipeline reflects New York’s extensive and diverse clean energy market opportunities
  By technology, end-use customer and geography
73% of the proposals received by NYGB identify the total project value of the investments proposed at $2.6 billion. While 27% of proposals received do not specify the total project value of investments, these have been estimated at just under $1.0 billion.

Other includes: fuel cell, micro-grid, electric vehicle infrastructure and battery storage.

MUSH/Government segment includes municipalities, universities, schools, and hospitals and City/State/Federal Government.
Timing Estimations
Anticipated time frame for various stages of transaction approval are estimates, particularly as proposals are submitted at varying stages of development, many product and transaction types are first-of-kind, and progress often requires counterparty delivery on conditions precedent.

- Multi-stage process, reflecting investment and financial industry “best practices”
- Good, innovative deals take time
- Collaborative approach with clients and partners to devise solutions
## Current Portfolio

**Market driven and responsive: within established investment criteria we don’t choose our partners, they choose NYGB**

<table>
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<tr>
<th>Deal</th>
<th>NYGB Capital</th>
<th>Summary</th>
<th>Market Barrier Addressed</th>
<th>NYGB’s Critical Role</th>
</tr>
</thead>
</table>
| **Level Solar** | $25.0 million | - NY-based solar provider designs/installs residential systems at no cost to consumer  
- Will support solar installations for up to 6,000 New York homes  
- NYGB partnership with U.S. Bank | - Limited track record is a real market impediment, even for sophisticated and seasoned developers.  
- Leads to insufficient private capital being available or subject to terms undermining project viability  
- Hinders rapid acceleration of New York’s clean energy marketplace | - Provide needed capital to meet demand  
- Allows Level Solar to prove their business model, reaching a size that is appealing to traditional capital providers, while increasing residential solar access in the State |
| **United Wind** | $4.0 million | - NY-based developer designs/installs distributed wind energy projects throughout Central and Western New York  
- Residential, agricultural and commercial end-users  
- Revolving construction loans and partnership with U.S. Bank will support 160+ distributed wind energy projects | - Private capital providers have traditionally financed larger, utility-scale projects - construction financing for distributed generation is relatively new | - Standardizing construction loan process by financing small, individual projects on a portfolio basis to realize implementation and pricing efficiencies  
- Build track record for this type of financing and establish precedent for distributed energy construction loans  
- Easily replicated for other forms of renewable energy, delivering greater access to distributed generation |
## NYGB focuses on investments that would not otherwise get made in the current market, partnering with the private sector

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| **Renew Financial** | $20.0 million | ▪ ReHome New York offers up to 12,000 New York homeowners low-cost financing for energy efficiency  
▪ Financing provided by NYGB and Citi bringing this consumer lending program to NYS for the first time | ▪ Lack of performance data for unsecured residential energy efficiency loans  
▪ Capital markets familiar with unsecured consumer loans for other areas – auto loans, credit card loans, etc. – but energy efficiency loans are relatively new | ▪ Needed for loan portfolios to receive a rating (by traditional ratings agency such as Moody’s or S&P) so they can be sold on secondary markets (securitized)  
▪ This deal brings energy efficiency loans into mainstream so capital markets can more efficiently price these products, lowering costs to consumers |
| **EIC** | $0.50 million | ▪ NY-based, not-for-profit, offers Energize NY Commercial Property Assessed Clean Energy (“C-PACE”) Finance Program for energy improvements on commercial and not-for-profit properties in participating municipalities across NYS  
▪ Financing provided by NYGB and Bank of America | ▪ Limited performance history for energy savings and clean energy generation projects discourages traditional capital markets participation  
▪ Participating municipalities do not have the financial flexibility – given local budgets - to withstand defaults on payments from property owners | ▪ With NYGB’s letter of credit, EIC is able to offer the C-PACE financing platform to additional municipalities across NYS  
▪ NYGB’s letter of credit provides assurance to participating municipalities that they will be covered in the event of default  
▪ Transaction builds a track record of energy savings and clean energy generation so traditional capital providers can step-in and play similar financial roles in the future |
What’s to Come

- Energy Efficiency Residential Loan Warehouse
- Residential Solar PPA Back-leverage Warehouse
- C-PACE
- Middle Market Commercial Solar Warehouse
- C&I Energy Efficiency ESA Loan Portfolios
- Battery Storage/Demand Response Debt Portfolios
- Energy Services Contract Monetization Portfolios
- Community Solar Debt Portfolio
- Utility On-Bill Warehouse
- Streetlighting Savings Monetization Warehouse
- Residential Solar Loan Portfolio
- C&I CHP Debt Portfolio
- Energy Efficiency Residential ESA Monetization Warehouse
- Utility & smaller scale renewables
## Municipal Opportunities

- **Municipal gasification plants** diverting household waste from landfill & generating renewable electricity
- **Anaerobic digester systems**
- **Municipal landfill waste-to-gas projects**
- **Installation of rooftop solar on council and community facilities**
- **Retrofits for commercial properties**
- **Replacing public lighting with energy efficient LEDs**
NY Green Bank
1359 Broadway, 19th Floor
New York, NY 10018
Tel: (212) 379-6260
www.greenbank.ny.gov
Climate Smart Communities Webinar

Thanks for joining us!

Website for webinar slides and recordings:

http://www.dec.ny.gov/energy/84359.html

Contact Email: Dazzle Ekblad
dazzle.ekblad@dec.ny.gov